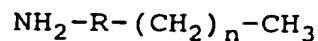## CLAIMS

1 1.   A method for modifying the characteristics of a protein,
2 comprising the steps of:
3   attaching a lipid substituent to the protein by a
4 covalent linkage of at least one lipoamine residue to a
5 carbohydrate side chain to produce a lipidized protein; and
6   recovering the lipidized protein.

1 2.   A method according to Claim 1, wherein the lipid
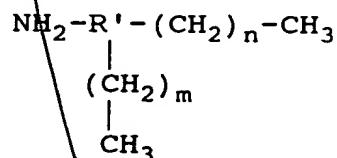2 substituent is a lipoamine.

1 3.   A method according to Claim 2, wherein the step of
2 attaching further comprises the steps of
3   oxidizing a carbohydrate on a glycosylated
4 polypeptide to produce an oxidized glycoprotein; and
5   reacting the oxidized glycoprotein with a lipoamine
6 under suitable reaction conditions to form a lipidized protein.

1 4.   A method according to Claim 2, wherein the lipoamine is a
2 straight-chain lipoamine according to the formula:
3
4                        $NH_2-R-(CH_2)_n-CH_3$
5
6   where R is selected from the group consisting of:
7 disubstituted alkyl (alkylene); 1,4-disubstituted cyclohexyl;
8 disubstituted aryl (arylene); amido group of the formula –
9 $(CHR_1)-CO-NH-$ wherein R_1 is hydrogen or an amino group;
10 alkylcarbonyl; and phosphate diester; n is 1-50.

1 5.   A method according to Claim 2, wherein the lipoamine is a
2 branched-chain lipoamine according to the formula:
3
4                $NH_2-R'-(CH_2)_n-CH_3$
5 |
6                     $(CH_2)_m$
7 |
8   CH_3
9
10
11   where R' is: a trisubstituted alkyl; a trisubstituted
12 aryl; an amido group of the formula $-(CHR_1)-CO-N<$ wherein R_1 is

13   hydrogen or an amino group; an imino group of the formula –
14   $CHR_2-NH-CH<$ wherein R_2 is hydrogen or an amino group or an
15   amino group of the formula $-CH_2-N<$; or a phosphate diester; m
16   is 1-50; n is 1-50; and m and n are selected independently.

1   6.   A method according to claim 5, wherein the branched-chain
2   lipoamine is glycyldioctadecylamide.

1   7.   A method according to Claim 1, wherein the protein is a
2   naturally-occurring glycoprotein.

1   8.   A method according to Claim 1, wherein the protein is
2   encoded by an immunoglobulin superfamily gene.

1   9.   A method for targeting an intracellular protein for
2   binding with an antibody in a cell, comprising contacting the
3   cell with a lipidized antibody which binds specifically with
4   the intracellular protein.

1   10.   A method according to Claim 9, wherein the lipidized
2   antibody comprises at least one lipoamine residue linked to a
3   carbohydrate side chain of an immunoglobulin.

1   11.   A method according to Claim 14, wherein the lipoamine is
2   glycyldioctadecylamide.

1   12.   A method according to Claim 13, wherein the lipidized
2   antibody is administered to a living mammalian cells _in vivo_.

1   13.   A method according to Claim 12, wherein the lipidized
2   antibody is taken up into the living cells to a greater extent
3   than is a comparable antibody having the same amino acid
4   sequence(s) and the same glycosylation pattern and lacking
5   lipidization.

1   14.   A composition for therapy or prophylaxis of a disease,
2   comprising a therapeutically effective dosage of a lipidized
3   protein.

1 15.   A composition according to Claim 14, wherein the lipidized
2 protein is an antibody.

1 16.   A composition according to Claim 15, wherein the antibody
2 binds to an intracellular protein.

1 17.   A composition according to Claim 16, wherein the
2 intracellular protein is a viral-encoded protein.

1 18.   A composition according to Claim 17, wherein the viral-
2 encoded protein is a Tat protein encoded by HIV-1.

1 19.   A composition for prophylaxis, comprising a
2 prophylactically effective dosage of a lipidized antibody
3 wherein a lipid substituent is covalently linked to the
4 antibody by a covalent linkage of at least one lipoamine
5 residue to a carbohydrate side chain to produce a lipidized
6 antibody.

1 20.   A composition comprising a lipidized antibody linked to a
2 diagnostic reporter, wherein a lipid substituent is covalently
3 linked to the antibody by a covalent linkage of at least one
4 lipoamine residue to a carbohydrate side chain to produce a
5 lipidized antibody.

1 21.   A composition of claim 20, wherein the antibody binds to
2 an antigen intracellularly in living cells.

1 22.   A composition of claim 22, wherein the antibody binds to
2 the HIV-1 Tat protein intracellularly in HIV-infected human
3 cells.

1 23.   A method for diagnosing a pathological condition,
2 comprising the steps of:
3   administering a lipidized antibody comprising a
4 diagnostic reporter to a cell sample; and
5   detecting the presence of cells in which the
6 diagnostic reporter is preferentially localized.